



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-1404; Project Identifier MCAI-2022-01044-A; Amendment 39-22410; AD 2023-07-08]

RIN 2120-AA64

Airworthiness Directives; Pilatus Aircraft Ltd. Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Pilatus Aircraft Ltd. (Pilatus) Model PC-12/47E airplanes. This AD was prompted by mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI identifies the unsafe condition as corrosion of the actuator attachment lug areas underneath the anti-rotation pads of the main landing gear (MLG) and nose landing gear (NLG). This AD requires replacing certain MLG and NLG electro-mechanical actuators. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES:

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No.FAA-2022-1404; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the MCAI, any comments received, and other information. The address for Docket

Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Doug Rudolph, Aviation Safety Engineer, FAA, General Aviation & Rotorcraft Section, International Validation Branch, 901 Locust, Room 301, Kansas City, MO 64106; phone: (816) 329-4059; email: doug.rudolph@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain serial-numbered Pilatus Model PC-12/47E airplanes. The NPRM published in the *Federal Register* on November 7, 2022 (87 FR 66971). The NPRM was prompted by EASA AD 2022-0158, dated August 4, 2022 (EASA AD 2022-0158) (referred to after this as “the MCAI”), issued by the European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union.

The MCAI was prompted by occurrences of corrosion on the MLG and NLG actuator attachment lugs, underneath the anti-rotation pads of Pilatus Model PC-12/47E airplanes. The MCAI states that investigations revealed that extending or retracting the affected landing gear results in fretting between the anti-rotation pads and the actuator attachment lugs. This decreases the effectivity of surface protection, allows corrosion to develop on the attachment lug areas underneath the anti-rotation pads, and leads to cracking and failure of the attachment lugs.

This condition, if not addressed, could result in loss of functionality of the MLG and NLG, which could result in damage to the airplane and injury to the occupants. The MCAI requires inspecting, and if required, replacing affected MLG and NLG electro-

mechanical actuators with serviceable actuators and prohibits the installation of an affected actuator unless it has been reworked to become a serviceable actuator.

Since issuance of the NPRM, EASA superseded EASA AD 2022-0158 with EASA AD 2022-0245, dated December 12, 2022 (EASA AD 2022-0245). EASA AD 2022-0245 retains the requirements of EASA AD 2022-0158 and references revised service information.

In the NPRM, the FAA proposed to require replacing affected MLG and NLG actuators with serviceable actuators and prohibit the installation of an affected actuator unless it has been reworked (inspection and modification) to become a serviceable actuator. The FAA is issuing this AD to address the unsafe condition on these products.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1404.

Discussion of Final Airworthiness Directive

Comments

The FAA received a comment from the Air Line Pilots Association, International (ALPA), who supported the NPRM without change

The FAA received additional comments from Pilatus. The following presents the comments received on the NPRM and the FAA's response.

Request to Reference Revised Service Information

Pilatus stated that since the NPRM was published, revised service information was issued and requested that the FAA change paragraph (f)(2)(i) in the proposed AD to reference Pilatus PC-12 Service Bulletin 32-030, Rev. 2, dated October 7, 2022; and Tamagawa Seiki Co., Ltd., Service Bulletin SB21-0001, Issue 3, dated August 25, 2022, instead of Pilatus PC-12 Service Bulletin 32-030, dated June 27, 2022; and Tamagawa Seiki Co., Ltd., Service Bulletin SB21-0001, dated March 31, 2022. The commenter also noted that after the NPRM was published, EASA released Proposed Airworthiness

Directive (PAD) 22-149, dated November 9, 2022, which indicated that EASA AD 2022-0158 would be superseded.

The FAA agrees with the commenter's request. The FAA reviewed Pilatus PC-12 Service Bulletin 32-030, Rev. 2, dated October 7, 2022, which references Tamagawa Seiki Co., Ltd., SB SB21-0001, Issue 3, dated August 25, 2022, and determined that no additional work is specified. The FAA revised paragraph (f)(2)(i) of this AD to reference this revised service information. The FAA added paragraph (i) to this AD (and redesignated the subsequent paragraphs of this AD accordingly) to provide credit for actions done before the effective date of this AD using Pilatus PC-12 Service Bulletin 32-030, dated June 27, 2022; and Tamagawa Seiki Co., Ltd., Service Bulletin SB21-0001, dated March 31, 2022.

As discussed in the Background section of this final rule, EASA superseded EASA AD 2022-0158 with EASA AD 2022-0245. The FAA did not update the reference to the MCAI in this AD to refer to EASA AD 2022-0245 because in the NPRM, the FAA already proposed to require the actions in EASA AD 2022-0245. The FAA discussed this in the "Differences Between this Proposed AD and the MCAI" section of the NPRM.

Request to Extend the Compliance for Certain Airplanes

Pilatus requested that the FAA revise the 3-month compliance time in paragraph (h)(1) of the proposed AD and explained this compliance time should only be applicable to older airplanes on which the affected actuators were installed and the initial failures were identified.

The FAA agrees. The FAA is keeping the compliance time for replacement of each affected part for the older airplanes with serial numbers (S/Ns) 1300 and 1451 to 1663 inclusive, which is within 3 months after the effective date of the AD. The FAA is extending the compliance time for replacement of each affected part from what was called out in the NPRM for the rest of airplanes as follows:

- For airplanes with S/Ns 1664 through 1719 inclusive, and S/Ns 1721 through 1942 inclusive, within 300 hours time-in-service (TIS) after the effective date of this AD or within 12 months after the effective date of this AD, whichever occurs first.

- For airplanes with S/Ns 1720, 2001 through 2202 inclusive, 2204, and 2206, within 600 hours TIS after the effective date of this AD or within 12 months after the effective date of this AD, whichever occurs first.

Conclusion

These products have been approved by the aviation authority of another country and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI referenced above. The FAA reviewed the relevant data, considered the comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes increase the economic burden on any operator.

Differences Between this AD and the MCAI

The MCAI bases the compliance time for the replacement of affected MLG and NLG electro-mechanical actuators on the corrosion environment of the airplane. FAA regulations do not require operators to track operations in different environmental conditions and thus there is no way to determine whether an airplane is in the category of moderate to severe or mild corrosion environment.

Costs of Compliance

The FAA estimates that this AD affects 440 airplanes of U.S. registry.

The FAA estimates that the costs of one of the two actions below will be required to comply with this AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
*Rework (inspection and modification)	5 work-hours x \$85 per hour = \$425	Up to \$1,245	\$1,670 (for rework of all three actuators)	\$734,800
*Replacement	3 work-hours x \$85 per hour = \$255	\$4,750 (Actuator Part Number (P/N) 959.56.01.852, nose landing gear) and \$11,100 (for 2 actuators - Actuator P/N 659.56.01.853, main landing gear)	\$16,105 (for replacement of all three actuators)	\$7,086,200

* Only the rework (inspection and modification) or the replacement will be required by this AD. Both actions will not be required.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2023-07-08 Pilatus Aircraft Ltd.: Amendment 39-22410; Docket No. FAA-2022-1404; Project Identifier MCAI-2022-01044-A.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Pilatus Aircraft Ltd. Model PC-12/47E airplanes, serial number (S/N) 1300 and S/Ns 1451 and higher, certificated in any category.

(d) Subject

Joint Aircraft System Component (JASC) Code 3211, Main Landing Gear Attach Section; and JASC Code 3221, Nose/Tail Landing Gear Attach Section.

(e) Unsafe Condition

This AD was prompted by mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI identifies the unsafe condition as corrosion leading to cracks on the actuator attachment lug areas underneath the anti-rotation pads of the main landing gear (MLG) and nose landing gear (NLG). The FAA is issuing this AD to address this condition. The unsafe condition, if not addressed, could result in loss of functionality of the MLG and NLG, which could result in damage to the airplane and injury to the occupants.

(f) Definitions

For the purposes of this AD, the following definitions apply:

(1) Affected parts are defined as MLG electro-mechanical actuators having part number (P/N) 959.56.01.823 or P/N 959.56.01.845 and NLG electro-mechanical actuators having P/N 959.56.01.824 or P/N 959.56.01.844.

(2) Serviceable parts are defined as one of the following:

(i) MLG electro-mechanical actuators having P/N 959.56.01.823 or P/N 959.56.01.845 and NLG electro-mechanical actuators having P/N 959.56.01.824 or P/N 959.56.01.844 that have been reworked (inspection and modification) in accordance with

the instructions in Pilatus PC-12 Service Bulletin 32-030, Rev. 2, dated October 7, 2022; and Tamagawa Seiki Co., Ltd., Service Bulletin SB21-0001, Issue 3, dated August 25, 2022; or

(ii) MLG electro-mechanical actuators having P/N 959.56.01.853 and NLG electro-mechanical actuators having P/N 959.56.01.852.

(g) Compliance

Comply with this AD within the compliance times specified, unless already done.

(h) Required Actions

(1) Replace each affected part as defined in paragraph (f)(1) of this AD with a serviceable part as defined in either paragraph (f)(2)(i) or (ii) of this AD, as follows:

(i) For airplanes with S/Ns 1300 and 1451 through 1663 inclusive, within 3 months after the effective date of the AD.

(ii) For airplanes with S/Ns 1664 through 1719 inclusive, and S/Ns 1721 through 1942 inclusive, within 300 hours time-in-service (TIS) after the effective date of this AD or within 12 months after the effective date of this AD, whichever occurs first.

(iii) For airplanes with S/Ns 1720, 2001 through 2202 inclusive, 2204, and 2206, within 600 hours TIS after the effective date of this AD or within 12 months after the effective date of this AD, whichever occurs first.

(2) As of the effective date of this AD, do not install an affected part as defined in paragraph (f)(1) of this AD on any airplane unless it has been reworked (inspection and modification) and made a serviceable part as defined in paragraph (f)(2)(i) of this AD.

(i) Credit for Previous Actions

This paragraph provides credit for the actions required by paragraph (h)(1) of this AD if those actions were done before the effective date of this AD using Pilatus PC-12 Service Bulletin 32-030, dated June 27, 2022; and Tamagawa Seiki Co., Ltd., Service Bulletin SB21-0001, dated March 31, 2022.

(j) Alternative Methods of Compliance (AMOCs)

The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in § 39.19. In accordance with § 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the International Validation Branch, mail it to the address identified in paragraph (k)(2) of this AD or email to: 9-AVS-AIR-730-AMOC@faa.gov. If mailing information, also submit information by email.

(k) Additional Information

(1) Refer to European Union Aviation Safety Agency (EASA) AD 2022-0158, dated August 4, 2022, for related information. This EASA AD may be found in the AD docket at regulations.gov under Docket No. FAA-2022-1404.

(2) For more information about this AD, contact Doug Rudolph, Aviation Safety Engineer, FAA, General Aviation & Rotorcraft Section, International Validation Branch, 901 Locust, Room 301, Kansas City, MO 64106; phone: (816) 329-4059; email: doug.rudolph@faa.gov.

(3) For Pilatus and Tamagawa Seki Co., Ltd. service information that is not incorporated by reference in this AD, contact Pilatus Aircraft Limited, Customer Support General Aviation, CH-6371 Stans, Switzerland; phone: +41 848 24 7 365; email: techsupport.ch@pilatus-aircraft.com; website: pilatus-aircraft.com. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (817) 222-5110.

(l) Material Incorporated by Reference

None.

Issued on April 8, 2023.

Christina Underwood, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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